

# Mutational signatures mark cancer's smoking gun

November 3, 2016



A broad computational study of cancer genome sequences by Los Alamos National Laboratory with the UK's Wellcome Trust Sanger Institute and other collaborators identifies telltale mutational signatures associated with smoking tobacco. The research demonstrates, for the first time, that smoking increases cancer risk by causing somatic mutations in tissues directly and indirectly exposed to tobacco smoke. The international study was published in the November 4 issue of *Science*. The analysis shows that tobacco smoking causes mutations leading to cancer by multiple distinct mechanisms, including by damaging DNA in organs and by speeding up a mutational cellular clock.

Read the [release](#).

Los Alamos National Laboratory

[www.lanl.gov](http://www.lanl.gov)

(505) 667-7000

Los Alamos, NM

Operated by Los Alamos National Security, LLC for the Department of Energy's NNSA

